## **REMARKS**

Claims 1-32 are pending in the application. Claims 17-32 have been withdrawn from consideration. No claims have been amended. Claims 1, 3, 5 and 8 were rejected under 35 U.S.C. § 103(a). Applicants thankfully acknowledge that claims 9-16 have been allowed and claims 2, 4, 6 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In light of the following arguments Applicants respectfully traverse the rejections and request favorable reconsideration.

## On the Merits

The Office Action has again rejected claims 1, 3, 5 and 8 under 35 U.S.C. §103(a) as being unpatentable over *Natori* (US App. Pub. 2003/0021079), in view of *Nam* (US App. Pub. 2003/0057464) and further in view of *Lauder* (USP 4,110,254). Applicants respectfully traverse this rejection. Although not mentioned in the rejection, it appears that the Office Action also relies upon *Yang* (US App. Pub. 2001/0051381) based on the Office Action's arguments.

It appears that the Office Action contends that *Natori*, *Yang* and *Lauder* may each disclose the ferroelectric layer structure as required by claim 1. However, *Natori* only discloses an "ABO<sub>3</sub> type oxide in which Si is provided in a B site." Claim 33. This is not what is required in claim 1. The relevant element of claim 1 reads: "a ferroelectric layer ... having an ABO<sub>3</sub> perovskite structure that contains Ir in at least one of an A site and a B site (A = any one of Bi.

Pb, Ba, Sr, Ca, Na, K, and a rare earth element, B = any one of Ti, Zr, Nb, Ta, W, Mn, Fe, Co, and Cr)...."

The Office Action contends that *Yang* discloses "a metal oxide catalytic composition where in columns 3 and 4 the required ferroelectric/Iridium structure is disclosed." However, *Yang* only discloses that "the first conductive layer 21 is preferably made of an Ir, IrO<sub>x</sub> and Ir laminated layer, the ferroelectric layer 22 is preferably made of a ferroelectric layer with a bilayered perovskite, e.g. PZT (Pb(Zr<sub>x</sub>Ti<sub>1-x</sub>)O<sub>3</sub>, SBT (Sr<sub>x</sub>Bi<sub>y</sub>Ta<sub>2</sub>O<sub>9</sub>), SBTN (Sr<sub>x</sub>Bi<sub>y</sub>(Ta<sub>i</sub>Nb<sub>j</sub>)<sub>2</sub>O<sub>9</sub>) and BLT (Bi<sub>4-x</sub>La<sub>x</sub>Ti<sub>3</sub>O<sub>12</sub>)." This is not the ferroelectric layer structure required in claim 1 of the present invention. (See claim 1 element above.)

The Office Action must rely on *Lauder*, which is the only reference that appears to disclose an ABO<sub>3</sub> perovskite structure, wherein the "type A cation sites are substantially fully occupied by ions of one metal having an atomic number of 11 to 51 [Na = 11, K = 19, Ca = 20, Sr = 38], 57 to 71, or 89 to 103; about from 1 to 20% of the type B cation sites are occupied by ions of at least one platinum group metal selected from ruthenium, osmium, rhodium, <u>iridium</u>, palladium, and platinum..."

Therefore, it appears that the *Lauder* reference may disclose the ferroelectric layer structure required by claim 1: "a ferroelectric layer ... having an ABO<sub>3</sub> perovskite structure that contains Ir in at least one of an A site and a B site (A = any one of Bi, Pb, Ba, <u>Sr</u>, <u>Ca</u>, <u>Na</u>, <u>K</u>, and a rare earth element, B = any one of Ti, Zr, Nb, Ta, W, Mn, Fe, Co, and Cr)...."

However, even if it can be considered that Lauder discloses a material which may

correspond to the material of the ferroelectric layer, the Office Action has failed to provide any

reason why one of ordinary skill in the art would have been motivated to combine the references

in the manner formulated by the Office Action. Furthermore, although the Office Action argues

that the references would be combined "in order to have a semiconductor memory structure with

increased performance;" there is no such teaching provided by the combination of references that

such a result would be achieved.

The Office Action has addressed the response filed on January 24, 2006, but has not

provided any further explanation of the rejection. The Office Action maintains that the Lauder

reference ("useful for the promotion of gaseous oxidation and reduction reactions, particularly in

the cleanup of exhaust gases of internal combustion engines,") is analogous art.

The Office Action cites to In re Oetiker, which held, "In order to rely on a reference as a

basis for rejection of an applicant's invention, the reference must either be in the field of

applicant's endeavour or, if not, then be reasonably pertinent to the particular problem with

which the inventor was concerned."

As indicated above, *In re Oetiker* requires that the reference be "in the field of applicant's

endeavor," or "reasonably pertinent to the particular problem with which the inventor was

concerned." In the present case, neither of these options is met with regards to the Lauder

reference.

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The present invention relates to a "semiconductor device having a ferroelectric

capacitor." Page 1, lines 15 and 16. Lauder relates to "the cleanup of exhaust gases of internal

combustion engines." Abstract. On its face, the inventions are not in the same field.

Furthermore, the Lauder reference is not "reasonably pertinent to the particular problem

with which the inventor was concerned." In the present application, "it is an object of the present

invention to provide a semiconductor device capable of further improving characteristics of a

ferroelectric capacitor compared to the prior art..." Page 4, lines 19-22.

The particular ferroelectric layer structure as required in claim 1 is concerned with

improving the ferroelectric performance of the device. See Figures 9-17 and accompanying

description. Lauder on the other hand is concerned with:

compounds [that] are especially useful as catalysts for the oxidation of carbon

monoxide and gaseous hydrocarbons and for the reduction of nitrogen oxides

under conditions typical of those involved in the cleanup of the exhaust gases

from internal combustion engines. Summary of Invention, column 2, lines 54-

59.

As is readily apparent from the previous passages, the respective inventions were

concerned with different problems. Therefore, it appears that the Office Action cannot meet the

required burden of showing obviousness under 35 U.S.C. §103(a), because the references

provide no motivation to combine, and the references are non-analogous art.

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It appears unreasonable to believe that a person having ordinary skill in the art would find

it obvious to combine Lauder, which deals with catalytic converters for combustion engines,

with Natori, Nam or Yang which deal with the semiconductor arts. The Office Action provides

no motivation of why a person of ordinary skill in the art would want to combine the references.

"The Office Action must present a convincing line of reasoning as to why the artisan would have

found the claimed invention to have been obvious in light of the teachings of the references."

MPEP 2142.

In view of the aforementioned remarks, Applicants submit that the claims are in condition

for allowance. Applicants request such action at an early date.

If the Examiner believes that this application is not now in condition for allowance, the

Examiner is requested to contact Applicants' undersigned attorney to arrange for an interview to

expedite the disposition of this case.

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If this paper is not timely filed, Applicants respectfully petition for an appropriate extension of time. The fees for such an extension or any other fees that may be due with respect to this paper may be charged to Deposit Account No. 50-2866.

Respectfully submitted,

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